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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/534,058	10/27/2005	Ken Mashitani	070591-0032	2719

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EXAMINER	
KIM, HEE-YONG	
ART UNIT	PAPER NUMBER
2621	
MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/534,058	MASHITANI ET AL.	
	Examiner	Art Unit	
	HEE-YONG KIM	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 October 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6 and 8-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6 and 8-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 May 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. **Claims 1-6** are amended, and **claims 7** and **11** are cancelled.

2. Applicant's arguments with respect to **claims 1-5** and **8-10** as filed on 10/15/2009 have been considered but are moot in view of the new ground(s) of rejections.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. **Claims 1-5**, and **8-10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Toru (Japan patent 2000-078611) in view of Nakagawa (US patent 6,518,966), hereafter referenced as Toru and Nakagawa respectively.

Regarding **claim 1,** Toru discloses Stereoscopic Video Image Receiver and stereoscopic Video Image System. Specifically Toru discloses *providing stereoscopic vision-use information* (additional information coding (103) in figure 1 and depth value in paragraph 13) *useful for converting the data of said two-dimensional image* (2-D Image Encoding in Figure 1) *into a stereoscopic vision-use image* (Examiner read as two-dimensional image with depth value) *together with the data of said two-dimensional image* (2-D Image Encoding in Figure 1). However Toru fails to disclose *thickness information of an object on said two-dimensional image.* However the examiner

maintains that it was well known in the art to provide *thickness information of an object on said two-dimensional image* as taught by Nakagawa.

In the similar field of endeavor, Nakagawa discloses Method and Device for Collision Detection and Recording Medium Recorded with Collision Detection Method. Specifically Nakagawa discloses *thickness information* (Front Depth values and Back Depth Values, col.6, line 51-52) *of an object* (bodies, col.6, line 52) *on said two-dimensional image* (projected image 101a, Fig.1), for the purpose of collision detection (col.3, line 46).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Toru by providing *thickness information of an object on said two-dimensional image*, as taught by Nakagawa, for the purpose of collision detection. The Toru method, incorporating the Nakagawa thickness information providing method, has all the features of claim 1.

Regarding **claim 2**, Toru discloses *depth* information (additional information coding, 103 in figure 1 and depth value in paragraph 13) *indicating a near side position* (depth value in paragraph 13) *of an object* (elements, paragraph 6) *on said two-dimensional image* (two-dimensional image, paragraph 3) *together with the data of said two-dimensional image* (2-D Image Coding in Figure 1). However Toru fails to disclose *depth information indicating a far side position of the object on said two-dimensional image.*

Nakagawa discloses *depth information indicating a far side position of the object* (Back Depth Values, col.6, line 51-52) *on said two-dimensional image,* for the purpose of collision detection (col.3, line 46).

Therefore it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Toru by providing *information indicating a far side position of the object on said two-dimensional image*, as taught by Nakagawa, for the purpose of collision detection. The Toru method, incorporating the Nakagawa thickness information providing method, has all the features of claim 2.

Regarding **claim 3**, Toru discloses *providing stereoscopic vision-use information* (additional information coding, 103 in figure 1 and depth value in paragraph 13) *useful for converting the data of said two-dimensional image* (2-D Image Coding in Figure 1) *into a stereoscopic vision-use image* (Examiner read as two-dimensional image with depth value) *together with the data of said two-dimensional image* (2-D Image Coding in Figure 1). However Toru fails to disclose *thickness information of each dot* (inherent, because image is represented as pixels(dots)) *on said two-dimensional image.*

However, Nakagawa discloses disclose *thickness information* (Front Depth values and Back Depth Values, col.6, line 51-52) *of each dot on said two-dimensional image,* for the purpose of collision detection (col.3, line 46).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Toru by providing *thickness of dots*, as taught by Nakagawa, for the purpose of collision detection. The Toru method, incorporating the Nakagawa thickness information providing method, has all the features of claim 3.

Regarding **claim 4**, Toru discloses *depth information* (additional information coding, 103 in figure 1 and depth value in paragraph 13) *indicating a near side position* (depth value in paragraph 13) *of each dot on said two-dimensional image together with the data of said two-dimensional image.* However Toru fails to disclose *depth information indicating a far side position of each dot on said two-dimensional image.*

Nakagawa discloses *depth information indicating a far side position* (Front Depth values and Back Depth Values, col.6, line 51-52) *of each dot* (inherent, because image is represented as pixels(dots)) *on said two-dimensional image,* for the purpose of collision detection (col.3, line 46).

Therefore it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Toru by providing *information indicating a far side position of each dot on said two-dimensional image,* as taught by Nakagawa, for the purpose of collision detection. The Toru method, incorporating the Nakagawa thickness information providing method, has all the features of claim 4.

Regarding **claim 5**, Toru and Nakagawa discloses everything as applied above (see claim 1-4). Toru further discloses the providing method by transmitter (101) and receiver (105) in Figure 1, and also data structure in figure 5. The examiner maintains that the method can be translated into a *broadcasting or communication or recording into a recording medium.*

Regarding **claim 8**, Toru discloses *means for generating data of a stereoscopic vision-use image* (Stereo image generation, 108 in Figure 1) *on the basis of data of a two-dimensional image* (2-D image Decoding in receiver in Figure 1) *and stereoscopic*

vision-use information (additional information decoding, 107 in Figure 1). However Toru fails to disclose *means for composing an alternate image with said stereoscopic vision-use image on the basis of data of said alternate image, and a means for determining a collision between a displayed object on the stereoscopic vision-use image and a displayed object on said alternate image on the basis of* thickness *information of dots and an object on said two-dimensional image that are additional information of said two dimensional image.*

Nakagawa discloses *a means for composing alternate image* (Synthetic Image, Synthesize a three dimensional Image, col.5, line 50-54) *with said stereoscopic vision-use image* (images obtained with stereoscopic vision, col.1, line 10-14) *on the basis of said alternate image; and*

a means for determining a collision (Fig.1 and Collision detection Mean, Col. 4, line 24) *between a displayed object on the stereoscopic vision-use image* (images obtained with stereoscopic vision, col.1, line 10-14) *and a displayed object on said alternate image* (Synthetic Image, col.5, line 51) *on the basis of* thickness *information* (Front Depth values and Back Depth Values, col.6, line 51-52) *of dots* (inherent, because object is represented as pixels(dots)) *and an object* (Bodies, col.6, line 52) *on said two-dimensional image that are additional information* (Back depth value is additional information) *of said two dimensional image,* for the purpose of collision detection (col.3, line 46).

Therefore it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Toru by specifically providing *means for composing an*

alternate image with said stereoscopic vision-use image on the basis of data of said alternate image, and a means for determining a collision between a displayed object on the stereoscopic vision-use image and a displayed object on said alternate image on the basis of thickness *information of dots and an object on said two-dimensional image that are additional information of said two dimensional image*, as taught by Nakagawa, for the purpose of collision detection. The Toru method, incorporating the Nakagawa thickness information providing method and collision detection method and synthesizing image, has all the features of claim 8.

Regarding **claim 9**, Toru discloses *means for generating data of a stereoscopic vision-use image(*Stereo image generation, 108 in figure 1) *on the basis of data of a two-dimensional image* (2-D image Decoding in the receiver in figure 1) *and depth information* (additional information decoding, 107 in figure1) *indicating a near side of an object on said two-dimensional image.* However Toru fails to disclose *a means for generating thickness information of the object on the basis of depth information indicating a far side position of said object and said depth information indicating the near side position of the object.*

Specifically Nakagawa discloses *a means for generating thickness information* (Inherent, because thickness is distance between Front and Back Depth) *of the object on the basis of depth information indicating a far side position* (Back Depth Values, col.6, line 51-52) *of said object and said depth information indicating the near side position* (Front Depth Values, col.6, line 51-52) *of the object* (bodies, col.6, line 52) as taught by Nakagawa, for the purpose of collision detection(col.3, line 46).

Therefore it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Toru by specifically providing *a means for generating thickness information of the object on the basis of depth information indicating a far side position of said object and said depth information indicating the near side position of the object*, as taught by Nakagawa, for the purpose of collision detection. The Toru method, incorporating the Nakagawa thickness information providing method, has all the features of claim 9.

Regarding **claim 10**, Toru discloses *means for generating data of a stereoscopic vision-use image* (Stereo image generation, 108 in figure 1) *on the basis of data of a two-dimensional* image (2-D image Decoding in figure 1) *and depth information* (additional information, 107 in figure1) *indicating a near side position of each dot on said two-dimensional image*. However Toru fails to disclose *a means for generating thickness information of the object on the basis of depth information indicating a far side position of said each dot and said depth information indicating the near side position of said each dot.*

Specifically Nakagawa discloses *a means for generating thickness information* (Inherent, because thickness is distance between Front and Back Depth) *of the object on the basis of depth information indicating a far side position* (Back Depth Values, col.6, line 51-52) *of said each dot and said depth information indicating the near side position* (Front Depth Values, col.6, line 51-52) *of said each dot* (inherent, because object is represented as pixels (dots)).

Therefore it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Toru and Nakagawa by providing *information indicating a near and far side position of each dot on said two-dimensional image*, as taught by Nakagawa, for the purpose of collision detection. The Toru method, incorporating the Nakagawa thickness information providing method, has all the features of claim 10.

5. **Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over Toru in view of Nakagawa and further in view of Tomoaki (Japan Patent 2002-095018), hereafter referenced as Tomoaki.

Regarding **claim 6**, Toru and Nakagawa disclose everything claimed as applied above (see claim 5). However Toru and Nakagawa fail to disclose *providing at least one photographing time information out of focal distance information and field angle information, as additional information of said two-dimensional image together with the data of said two dimensional image.*

In the similar field of view Tomoaki discloses Image Display Controller, Image Display System and Method for Displaying Image Data. Specifically Tomoaki discloses the camera setting information (90 in figure 13d, paragraph 86) which is equivalent to *focal distance information and field angle information* and the stereo setting information (91 in figure 13d, paragraph 86) which is equivalent to *photographing time information*, for the purpose of camera setting modification (paragraph 89).

Therefore it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Toru and Nakagawa by specifically providing camera

setting information and the stereo setting information, as taught by Tomoaki, for the purpose of camera setting modification. The Toru method, incorporating the Nakagawa thickness information providing method, further incorporating the Tomoaki camera setting method, has all the features of claim 6.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following is related to Collision Detection in Graphics Environment.

- US 6,049,341 Mitchell discloses Edge Cycle Collision Detection in Graphics Environment

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HEE-YONG KIM whose telephone number is (571)270-3669. The examiner can normally be reached on Monday-Thursday,8:00am-5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on (571)273-8300. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/HEE-YONG KIM/
Examiner, Art Unit 2621

/Andy S. Rao/
Primary Examiner, Art Unit 2621
January 6, 2010